

SOV/137-58-12-25208

Structural Changes in Surface Layers of Technically-pure Iron (cont.)

given of the structure of this zone and the  $H_V$  of its surface layers with different E. The following phases in the hardened layer were discovered by X-ray diffraction analysis: Fe  $\alpha$ , Fe<sub>4</sub>N, and austenite with an Fe E; cementite, Fe nitrides, austenite, and martensite with a graphite E; carbides of W and Ti, Fe nitrides, austenite, and martensite with a T15K6 E. Decomposition of nitrides and carbides with subsequent decrease of  $H_V$  was observed after tempering from 100 to 650°C and annealing at 750 and 850°. The formation of a hardened layer in electric-spark hardening is associated with the characteristic action of the spark discharge on the elements of the surrounding medium (air: 72% N<sub>2</sub> and 28% O<sub>2</sub>), as well as on the E material.

I. B.

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S/123/59/000/006/013/025  
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 120,  
# 20956

AUTHOR: Fufayev, L. S.

TITLE: The Influence of a Single Spark Discharge on the Structure of the  
Surface Layers of Carbon Steels

PERIODICAL: Tr. kafedry "Tekhnol. metallov". Mosk. stankoinstrum. in-t, 1957,  
No. 1, pp. 39-44

TEXT: Marks of single spark discharges were obtained on specimens of  
tempered steels 45, Y8 (U8), Y12 (U12) and hardened Y8 (U8) from electrodes of  
commercial Fe, graphite, and the hard alloy T15K6 (T15K6) at the voltage of 220 v,  
the capacitance of 200 microfarad, and the short-circuit current of 3 amp. A  
craterlike hole of 0.3-0.4-mm diameter emerges on the specimen surface at the  
point of spark discharge passing. The hole edges of tempered steel are surrounded  
by two concentric zones with an altered structure. The first zone is the zone of  
smelting and full hardening with martensite structure without excess phases, and  
the second zone is that with martensite structure and with a lattice of ferrite

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The Influence of a Single Spark Discharge on the Structure of the Surface Layers  
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(steel 45) or cementite (U12). The microhardness of the martensite sections of the second zone amounts to 890-1,070 kg/mm<sup>2</sup>. The hole on the hardened steel has, moreover, an external zone of tempering with a hardness of 710-840 kg/mm<sup>2</sup>. The first zone at the graphite anode contains a considerable amount of residual austenite in connection with the saturation of the metal by carbon as well as by nitrogen from the air. At the hard alloy anode, sections of the hard alloy are discovered with the microhardness of 2,575-2,853 kg/mm<sup>2</sup> which are located near the hole edges. The nature of hardness changes at tempering the martensite sections around the holes obtained at the hard alloy anode, points out the saturation of the metal by tungsten and cobalt from the anode. The following picture of the action of spark discharges on the metal is suggested: During a short time after the formation of the spark discharge, a "microbath" of liquid metal exists on the specimen surface; the initial composition of the liquid does not differ from that of the specimen. This bath at the iron anode is saturated additionally by nitrogen from the air; at the graphite anode by carbon and nitrogen; at the hard alloy anode by the elements constituting the alloy composition. The heat

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The Influence of a Single Spark Discharge on the Structure of the Surface Layers  
of Carbon Steels

elimination into the specimen bulk makes the cooling rate exceeding the critical  
rate, and the solidified metal of the first zone, as well as the metal of the  
second zone adjacent to the first one, is hardened. There are 8 figures.

S. A. G.

Translator's note: This is the full translation of the original Russian abstract. ✓

Card 3/3

PODGURSKIY, G.V., kand.tekhn.nauk; FUFAYEVA, M.A., inzh.

Mechanizing the machining of turning parts of sectors for  
manufacturing rolled drills. Nov.tekh.izg.instr. no.2:77-87  
'61. (MIRA 15:8)

(Metal cutting)

FUFAYEV, N-A

498

Neimark, Yu. I., and Fufaev, N. A. On an error of V. Volterra in his derivation of the equations of motion of a nonholonomic system. Akad. Nauk SSSR. Prikl. Mat. Mech. 15, 642-648 (1951). (Russian)  
Volterra's equations,

$$d(\partial T / \partial p_i) / dt = \sum a_{ij} (\partial T / \partial p_j) p_i + T + P_i$$

[Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. N. 33, 451-475 (1898)] for nonholonomic systems, are correct but their derivation is based on the relation  $dx_i - \delta x_i = 0$  which, in general, does not hold for holonomic systems. [This error was made and noticed by many writers.] The major part of the paper deals with errors in a paper of V. V. Dobronravov [Uchenye Zapiski Moskov. Gos. Univ. Mekhanika 122, tom II, 77-182 (1948); these Rev. 10, 630] who, from the same wrong relation, derived a wrong form of nonholonomic equations and a wrong generalization of the Hamilton-Jacobi theorem. These are disproved by means of examples. The authors seem to blame all this on Volterra.

Source: Mathematical Reviews,

A. W. Wundheiler (Chicago, Ill.).

Vol 13 No 6

onw Jett

FUFAYEV, N.A.(Gor'kiy).

Theory of the electromagnetic breaker. Avtom. i telem. 14 no.5:570-  
587 S-O '53. (MIRA 10:3)  
(Automatic control) (Electric circuit breakers)

USSR/Mathematics - Nonholonomic

Mar/Apr 53

"Comments on V. V. Dobronravov's Article 'Certain Problems of Mechanics of Nonholonomic Systems,'"  
Yu. I. Neymark and N. A. Fufayev (critics)

Prikl Mat i Mekh, Vol 17, No 2, p 260

State that a remark in V. V. Dobronravov's (Prikl Mat i Mekh, Vol 16, No 6, 1952) was in response to a criticism of certain of his works. The criticism appeared in the authors' (critics') article entitled "An Error by Volterra Admitted by him in

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his Derivation of the Equations of Motion of Non-holonomic Systems" (ibid. Vol 15, No 5, 1951).  
Point out errors in Dobronravov's articles.

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S/040/60/024/006/005/024

C 111/ C 333

AUTHORS: Neymark, Yu. J., Fufayev, N. A. (Gor'kiy)

TITLE: Permutable Relations in Analytical Mechanics of Nonholonomic Systems

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 6, pp. 1013-1017

TEXT: The authors investigate the question how far it is justified to assume the correctness of the relation

$$(0.1) \quad d \oint q_{\pi} - \oint dq_{\pi} = 0,$$

where  $d$  is the differentiation with respect to the time and  $\oint$  the virtual variation, not only for holonomic but also for non-holonomic systems. It is admissible according to Hamel and Volterra, it is not admissible according to Levi-Civita, Amaldi and others. ✓

The authors show that the discrepancy arises, since the operations  $d \oint$  and  $\oint d$  occurring in (0.1) are not satisfactorily defined. In the neighborhood of the considered path of motion  $q_i = q_i(t)$  the authors introduce a curvilinear system  $q_i = q_i(u_1, u_2, \dots, u_n)$  so that  $u_2 = u_3 = \dots = u_n = 0$  corresponds to the path, where  $u_1 = t$

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Permutable Relations in Analytical Mechanics of Nonholonomic Systems

is on the path. The planes which touch the surfaces  $u_{m+1} = \dots = u_n = 0$  in the points  $u_2 = u_3 = \dots = u_n = 0$  are the planes of virtual displacements of the system. For linear and homogeneous kinematic bindings now it is defined:

$$(1.1) \quad dq_\tau = \frac{\partial q_\tau}{\partial u_1} du_1, \quad \oint q_\tau = \frac{\partial q_\tau}{\partial u_r} \oint u_r \quad (\tau = 1, \dots, m+k; \quad r = 1, \dots, m) \\ dq_\tau = a_{\tau s} dq_s, \quad \oint q_\tau = a_{\tau s} \oint q_s \quad (\tau = m+k+1, \dots, n; \quad s = 1, \dots, m),$$

where  $m$  is the number of the degrees of freedom,  $k$  fixed number ( $0 \leq k \leq n-m$ ), where it is summed over double indices, and where  $r, s, l = 1, \dots, m; i = 1, \dots, n; j = m+1, \dots, n; \xi = m+1, \dots, m+k$   
 $\alpha, \beta, \lambda, \mu, \nu = 1, \dots, m+k; \sigma = m+k+1, m+k+2, \dots, n$ .

If for a nonholonomic system with the bindings

$$(1.2) \quad \dot{q}_j = a_{js} \dot{q}_s$$

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C 111/ C 333

Permutable Relations in Analytical Mechanics of Nonholonomic Systems

there are introduced the quasicordinates  $\pi_1, \dots, \pi_{m+k}$  by

$$(1.3) \quad \dot{\pi}_r = a_{rs} \dot{q}_s, \quad \dot{\pi}_s = a_{gs} \dot{q}_s - q_s$$

then one obtains the relations

$$(1.4) \quad d\delta q_\lambda - \delta dq_\lambda = 0, \quad d\delta \pi_\lambda - \delta d\pi_\lambda = \gamma_{\nu\lambda\mu} d\pi_\mu \delta \pi_\nu, \quad d\delta q_\epsilon - \delta dq_\epsilon = B_{rs}^\epsilon d\pi_r \delta \pi_s$$

where

$$(1.5) \quad \gamma_{\nu\lambda\mu} = b_{\alpha\nu} b_{\beta\mu} \left( \frac{\partial a_{\lambda\alpha}}{\partial q_\beta} - \frac{\partial a_{\lambda\beta}}{\partial q_\alpha} \right), \quad b_{\alpha\lambda} a_{\lambda\beta} = \delta_{\alpha\beta} \quad (\delta_{\alpha\beta} \text{ Kronecker symbol})$$

$$(1.6) \quad B_{rs}^\epsilon = \frac{\partial a_{rs}}{\partial q_1} + \frac{\partial a_{rs}}{\partial q_j} a_{jr} - \frac{\partial a_{sr}}{\partial q_s} - \frac{\partial a_{sr}}{\partial q_j} a_{js}$$

The two aspects mentioned above correspond to the cases  $k = n - m$  and  $k = 0$ .

Now the authors show that the equations of motion of a nonholonomic system can be written with the aid of (1.4) so that the equations

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Permutable Relations in Analytical Mechanics of Nonholonomous Systems

in quasicordinates of Hamel as well as the equations in real coordinates of Chaplygin are obtained as special cases. In the same way the principle of stationary effect can be formulated in a general form also valid for nonholonomous systems. ✓

The authors mention Suslov, Chaplygin, V. J. Kirgetov and P. Voronets.

There are 23 references; 11 Soviet, 5 German, 3 Italian, 2 French, 1 American and 1 Norwegian.

SUBMITTED: March 21, 1960

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24 4100

1103. 1057, 1111

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S/040/61/025/003/001/026  
D208/D304

AUTHOR: Fufayev, N.A. (Gor'kiy)

TITLE: Chaplygin equations and the transfer multiplier theorem

PERIODICAL: Akademiya nauk SSR. Otdeleniye tekhnicheskikh nauk. Prikladnaya matematika i mekhanika, v. 25, no. 3, 1961, 385 - 390

TEXT: This is a continuation of an earlier work by S.A. Chaplygin (Ref. 1: O dvizhenii tyazhelogo tela vrashcheniya na gorizonta'noy ploskosti (On the Motion of a Heavy Solid of Revolution on a Horizontal Plane) sobr. soch. Ti. izd-vo AN SSSR, L., 1933) and the author derives the Chaplygin equations of motion for non-holonomic systems in quasi-coordinates. The system is determined by  $n$  generalized coordinates  $q_1 \dots q_n$  and possesses  $m$  degrees of freedom ( $m < n$ ). Quasi-coordinates are defined by

$$\dot{q}_\alpha = a_\alpha \beta \dot{q}_\beta \quad (\alpha, \beta = 1, \dots, m) \quad (1.1)$$

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Chaplygin equations and the ...

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where a double subscript denotes summation, quasi-velocities are given by

$$\dot{q}_i = b_{i\sigma} \dot{\pi}_\sigma \quad (i = 1, \dots, n; \sigma = 1, \dots, m) \quad (1.2)$$

and resulting Chaplygin's equations are

$$\frac{d}{dt} \frac{\partial L^*}{\partial \dot{\pi}_\alpha} - \frac{\partial L^*}{\partial \pi_\alpha} + \frac{\partial L}{\partial q_i} \left( \frac{\partial b_{i\alpha}}{\partial \pi_\alpha} - \frac{\partial b_{i\alpha}}{\partial \pi_\alpha} \right) \dot{\pi}_\alpha = 0 \quad \left( \begin{matrix} i = 1, 2, 3, \dots, n \\ \alpha, \beta, \gamma = 1, \dots, m \end{matrix} \right) \quad (1.7)$$

where

$$L^*(q_\beta, \dot{\pi}_\sigma) = L(q_\beta, b_{i\sigma} \dot{\pi}_\sigma). \quad (1.5)$$

The method of integrating Chaplygin's equations is given by introducing new independent variable  $\tau$  related to time  $t$  by

$$d\tau = N dt \quad (0.1)$$

where  $N$  = a determinable function of independent parameters, called by the author the "transfer multiplier". Here the theorem is de-

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rived in terms of quasi-coordinates and the function N is found to be such as to satisfy simultaneously

$$\frac{1}{N} \frac{\partial N}{\partial \pi_1} = B_1 \left( \frac{\partial b_{12}}{\partial \pi_1} - \frac{\partial b_{11}}{\partial \pi_2} \right), \quad \frac{1}{N} \frac{\partial N}{\partial \pi_2} = -A_1 \left( \frac{\partial b_{12}}{\partial \pi_1} - \frac{\partial b_{11}}{\partial \pi_2} \right) \quad (2.9)$$

where

$$\frac{\partial b_{1\alpha}}{\partial \pi_\beta} = \frac{\partial b_{1\alpha}}{\partial q_\sigma} \frac{\partial q_\sigma}{\partial \pi_\beta} = \frac{\partial b_{1\alpha}}{\partial q_\sigma} b_{\sigma\beta} \quad (i = 1, \dots, n)$$

$A_1, B_1$  are known functions of  $q_1$  and  $q_2$  and given by

$$\frac{\partial L}{\partial q_1} = \frac{1}{N} (A_1 p_1 + A_2 p_2) \quad (2.8)$$

where

$$p_1 = \frac{\partial T^*}{\partial \pi_1} = N^2 (L_1 \pi_1' + M \pi_2'), \quad p_2 = \frac{\partial T^*}{\partial \pi_2} = N^2 (M \pi_1' + L_2 \pi_2') \quad (2.7)$$

and M is given by

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$$2T^* = L_1 \dot{\pi}_1^2 + 2M \dot{\pi}_1 \dot{\pi}_2 + L_2 \dot{\pi}_2^2 = N^2 (L_1 \pi_1'^2 + 2M \pi_1' \pi_2' + L_2 \pi_2'^2) = 2T^*$$

and

$$\dot{q}_i = b_{i1} \dot{\pi}_1 + b_{i2} \dot{\pi}_2 \quad (i = 1, \dots, n). \quad (2.1)$$

Next, the type of problems is considered for which quasi-coordinates can be introduced and it is shown that the problems have to satisfy the following conditions: 1) Number  $l$  of real coordinates on which coefficients of non-holonomic relations and Lagrangian function depend must be smaller than  $m$  = degrees of freedom of the system. 2) Number  $k$  of quasi-coordinates which together with  $l$  real coordinates are chosen as free parameters cannot be greater than  $m - l$ . An example quoted by Chaplygin is solved by means of quasi-coordinates. There are 7 Soviet-bloc references.

SUBMITTED: December 2, 1960

Card 4/4



NEYMARK, Yu.I.; FUFAYEV, N.A. (Gor'ky)

"Dynamics of non-holonomic systems"

Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb 64.

FUFAYEV, N. A. (Gor'ky)

"On the idealisation of surface contact by means of point contact".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

ACCESSION NR: AP4013380

S/0040/64/028/001/0051/0059

AUTHORS: Neymark, Yu. I. (Gor'kiy); Fufayev, N. A. (Gor'kiy)

TITLE: Equations of motion for systems with nonlinear nonholonomic relations

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 1, 1964, 51-59

TOPIC TAGS: equation of motion, nonlinear nonholonomic relation, analytic mechanics, virtual perturbation, Appell-Gamel example

ABSTRACT: The authors prove that the equations of motion of a system with a nonlinear nonholonomic relation, obtained by Gamel, do not describe its behavior if one considers that it is a limiting case of a nonholonomic system with linear relations. Apropos the possibility of realizing nonlinear nonholonomic relations, various works on this subject do not actually contain examples of systems with nonlinear ideal nonholonomic relations which are essentially different from the example of P. Appell given by him in 1911. This example was carefully studied by Gamel, who set up equations of motion for it, starting from the conventional definition of virtual perturbations for systems with nonlinear nonholonomic

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ACCESSION NR: AP4013380

relations. The authors show that a more correct approach to the study of the system in the Appell-Gamel example leads to motions which are not described by the equations obtained by Gamel. Orig. art. has: 6 figures and 23 formulas.

ASSOCIATION: none

SUBMITTED: 08Jul63

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: MM

NO REF SOV: 001

OTHER: 005

Card 2/2

FUFAYEV, N.A. (Gor'kiy.

Feasibility of nonholonomic coupling using the forces of  
viscous friction. Izv. m. i. mekh. 28 no. 28-13-515  
Mys. Te'k.

(NINA 1982)

POL'CHAYOV, V.M., ZEL'DIN, Ye.S. [deceased]; MINTS, R.P., PUPAYEV, N.A.

By means of an oscillator - rotor system. Izv. vyz. ucheb.  
rev.; radiofiz. 2 no.2:369-371 '65. (MIRA 18:6)

1. Naučno-Issledovatel'skiy fiziko-Tekhnicheskiy institut pri  
Gor'kovskoy universitate.

L 54607-65

ACCESSION NR: AP5006255

EWI(d)/ENT(m)/ENP(w) IJP(c) EM

S/0040/65/029/001/0046/0053

AUTHOR: Neymark, Yu. I. (Gor'kiy); Fufayev, N. A. (Gor'kiy) 10  
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TITLE: The stability of the states of equilibrium of nonholonomic systems

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1965, 46-53

TOPIC TAGS: stability criterion, oscillatory system, applied mathematics 16

ABSTRACT: The problem of the stability<sup>24</sup> of the states of equilibrium of nonholonomic systems was discussed by E. T. Whittaker (1937), O. Bottema (1949), M. A. Ayzerman and F. R. Gantmakher (1957), A. N. Obmorshev (1955), G. N. Knyazev (1963), and others. The methods proposed by them for the investigation of stability, however, do not agree even from the viewpoint of the nature of the null roots. A survey of these papers is given in the present work by the authors. It indicates not only the absence of a single unique approach to the problem of the stability of the states of equilibrium of nonholonomic systems, but also a number of contradictions in the method of investigation of the stability. As shown in the present work, a nonholonomic system possesses the property that its states of equilibrium cannot be isolated, but forms a manifold whose dimension is not less than the num-

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L 54607-65

ACCESSION NR: AP5006255

ber of nonholonomic constraints. This property is the determining condition for the presence of null roots in the characteristic equation. The authors formulate a theorem concerning the asymptotic stability of the manifold of the states of equilibrium. The discussion is illustrated by several examples: the motion of a solid body parallel to an inclined plane, and the motion of an axially symmetrical body bounded from below by a spherical surface which can roll without slippage in a spherical bowl of different radius. Orig. art. has: 4 figures, 22 formulas.

ASSOCIATION: none

SUBMITTED: 19Jun64

ENCL: 00

SUB CODE: KA, ME

NO REF SOV: 004

OTHER: 002

Card 2/2



L 43883-65

ACCESSION NR: AP5006849

S/0020/65/160/004/0781/0784

AUTHOR: Neymark, Yu. I.; Fufayev, N. A.

TITLE: Stability of equilibrium states of nonholonomic systems

SOURCE: AN SSSR. Doklady, v. 160, no. 4, 1965, 781-784

TOPIC TAGS: nonholonomic system, equilibrium state, stability, characteristic equation

ABSTRACT: It is shown that a nonholonomic system has a singularity in that its equilibrium states cannot be isolated, but form a manifold the dimensionality of which is equal to the number of equations of nonholonomic constraints. This singularity gives rise to zero roots of the characteristic equation. A theorem is formulated concerning the asymptotic stability of the manifold of equilibrium states. The theory is illustrated by means of an example of an axially symmetrical body, bounded from below by a spherical surface, which can rock without sliding in a spherical cup. This report was presented by A. Yu. Ishlinskiy. Orig. art. has: 2 figures and 16 formulas.

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L 43883-65

ACCESSION NR: AP5006849

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N. I. Lobachevskogo  
(Gor'kiy State University)

SUBMITTED: 18Jul64

ENCL: 00

SUB CODE: NA, ME

NR REF SOV: 004

OTHER: 002

Card 2/2 p18

ACC NR: AP6032847

(A)

SOURCE CODE: UR/0020/66/170/003/0533/0536

AUTHORS: Neymark, Yu. I.; Fufayev, N. A.

ORG: Scientific Research Institute of Applied Mathematics and Cybernetics at Gor'kiy State University imeni N. I. Lobachevskiy (Nauchno-issledovatel'skiy institut prikladnoy matematiki i kibernetiki pri Gor'kovskom gosudarstvennom universitete)

TITLE: On the problem of track stability of vehicles on pneumatic tires

SOURCE: AN SSSR. Doklady, v. 170, no. 3, 1966, 533-536

TOPIC TAGS: stability criterion, potential energy, kinetic energy, motor vehicle, aircraft tire

ABSTRACT: Using the various theorems first derived by M. V. Keldysh, an analysis is made of oscillations of a vehicle with pneumatic tires. The equations of motion for a vehicle with m-pneumatic tires are written for small departures from a straight line motion, along the OY-axis, with a constant speed V. The vibration of the tires (without slipping) is given by the two equations

$$\ddot{x}_l + \xi_l + V\theta_l + V\varphi_l = 0; \quad \dot{\theta}_l + \varphi_l - \alpha_l V \xi_l + \beta_l V \varphi_l + \gamma_l V \chi_l = 0, \\ l = (1, 2, \dots, m),$$

and the kinetic energy of the system is given by

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ACC NR: AP6032847

$$\frac{d}{dt} \frac{\partial T}{\partial \dot{q}_j} - \frac{\partial T}{\partial q_j} = Q_j + \sum_{i=1}^n \left( \frac{\partial U}{\partial \xi_i} \frac{\partial \xi_i}{\partial q_j} - \frac{\partial U}{\partial \chi_i} \frac{\partial \chi_i}{\partial q_j} + \frac{\partial U}{\partial \varphi_i} \frac{\partial \varphi_i}{\partial q_j} \right),$$

$$(j = 1, 2, \dots, n).$$

These equations are then simplified by using the assumption of very large speed  $V$ . This leads to the result

$$\ddot{x}_i + \frac{1}{\beta_i} \dot{\theta}_i = - \frac{a_i}{\beta_i} V \xi_i + \frac{\gamma_i}{\beta_i} V \chi_i - V \theta_i.$$

Three more equations are derived by taking the derivative of the potential energy  $U$ , with respect to the three coordinates  $\xi_i$ ,  $\chi_i$ ,  $\varphi_i$ . These equations are then designated as generalized lead-angle hypotheses. As an example, the vibration of an airplane chassis with three pneumatic wheels is discussed. This paper was presented by Academician A. Yu. Ishlinskiy on 23 December 1965. Orig. art. has: 15 equations.

SUB CODE: 13 / SUBM DATE: 23Dec65/ ORIG REF: 008/ OTH REF: 006

Card 2/2

L 45B25-65 EEO-2/EWT(d)/FBD/FSS-2/EWT(1)/FS(v)-3/EEC(k)-2/EMG(v)/EEC-4/EED-2/EMA(c)  
 Pn-4/Po-4/Pe-4/Pq-4/Pg-4/Pae-2/P1-4/Pk-4/P1-4 TT/GH/EC

ACCESSION NR AM5001722

BOOK EXPLOITATION

S/ 36  
 B-1

Gordeyev, Leonid Ivanovich; Zakolodyazhnyy, Vitaliy Pavlovich; Suvorov,  
 YEvgeniy Fedorovich; Fufayev, Vadim Alekseyevich; Churov, YEvgeniy Petrovich

Cosmic beacons in navigation (Kosmicheskiye mayaki v navigatsii), Moscow,  
 Voenizdat M-va obor. SSSR, 1964, 201 p. illus., biblio. 2,300 copies  
 printed.

TOPIC TAGS: <sup>q</sup>navigation, <sup>q</sup>guidance, artificial earth satellite, space  
 communication, satellite communication, navigation system Transit

PURPOSE AND COVERAGE: This book acquaints the reader with the principles of the  
 use of artificial earth satellites for navigation. It considers the effective-  
 ness of a satellite navigation system in determining location at sea, laws of  
 motion and methods of predicting the position of satellites in space at the  
 moment of observation. Methods of determining ship position from observations  
 of earth satellites and possibilities of measuring navigational parameters are  
 cited. The book describes the effect of the atmosphere and ionosphere on the  
 accuracy of these parameters. A generalized presentation of a navigational  
 system and its elements is given. The concluding chapter of the book acquaints  
 the reader with the American satellite navigation system "Transit". The book

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is written from materials of the foreign press and is intended for a broad audience interested in problems of navigation.

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L 45835-65

ACCESSION NR AM5001722

SUBMITTED: 21Mar64

SUB CODE: HQ, SV

NO REF SOV: 010

OTHER: 001

Card 3/3

16(+) 16. 3500

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S/020/60/131/01/009/060

AUTHOR: Fufayev, V.V.

TITLE: On Dirichlet Problem for Regions Having Corners

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 1, pp 37-39 (USSR)

ABSTRACT: Let the boundary  $\Gamma$  of  $\Omega$  be a smooth curve of the class  $H_{\infty}^{r+2+1/p}$  of S.M. Nikol'skiy, the ends of which meet under an angle  $\omega$ , such that there arises a corner. Finite pieces of  $\Gamma$  near the corner  $P_0$  are assumed to be linear. Let the length of  $\Gamma$  be 1 and let it be counted from the corner.

Theorem 1: Let  $r, \frac{r-1}{p}$  be non-integer positive numbers,

$U$  an harmonic function of  $x$  and  $y$ ,  $U \in W_p^{\bar{r}} H^{\omega}(\Omega)$ ,  $\bar{r} + \omega = r$ .

Then  $f(s) = U|_{\Gamma}$  has the properties 1.)  $f(s) \in H_p^{r-1/p}([0,1])$

2.) in the case  $\omega = \frac{\pi}{j}$ ,  $j = 1, 2, \dots$  it is  $f^{(kj)}(+0) =$

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68800

12

On Dirichlet Problem for Regions Having Corners S/020/60/131/01/009/060

$= (-1)^k f^{(kj)}(-0)$  for all  $k = 0, 1, 2, \dots$ , for which  $k_j < \bar{g}$ ,

where  $g = \frac{r-1}{p} = \bar{g} + B$ ,  $0 < B < 1$ . If  $\bar{g} = mj$  ( $m$  integer), then it is moreover

$$\left( \int_0^h |f^{(mj)}(u) - (-1)^m f^{(mj)}(-u)|^p du \right)^{1/p} \leq ch^B$$

Theorem 2 is <sup>a</sup> complete converse of theorem 1 in the case

$$\omega = \frac{\pi}{j}, \quad j = 1, 2, \dots$$

Theorem 3 shows that, if  $\omega \neq \frac{\pi}{j}$ , the converse (theorem 2) only holds in the case  $r - \frac{2}{p} < \frac{\pi}{\omega}$ .

The proofs are based on potentials of a double layer and on conformal mappings.

Card 2/3

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On Dirichlet Problem for Regions Having Corners S/020/60/131/01/009/C60

N.P. Mozzherova, Ya.S. Bugrov, N.M. Gyunter, Kh.L. Smolinskiy  
are mentioned.

There are 7 references, 5 of which are Soviet, 1 German, and  
1 American.

PRESENTED: November 10, 1959, by I.M. Vinogradov, Academician

SUBMITTED: November 9, 1959

X

Card 3/3

FUFAYEV, V.V.

Conformal transformations of cornered regions, and the differential properties of the solutions to Poisson's equation in cornered regions. Dokl. AN SSSR 152 no.4: 838-840 0 '63. (MIRA 16:11)

1. Moskovskiy fiziko-tekhnicheskii institut. Predstavleno akademikom S.L. Sobolevym.

ASRIYANTS, A.I., dots., kand. tekhn.nauk; YEFIMOV, V.V., prof.,  
doktor tekhn. nauk, red.; FUFAYEVA, G.I., red.;  
CHIZHEVSKIY, E.M., tekhn. red.

[Reconditioning parts by metallization] Vosstanovlenie  
detalei metallizatsiei; po kursu "Proizvodstvo i remont  
avtomobiloi (uchebnoe posobie). Pod red. Efremova. Mo-  
skva, Rosvuzizdat, 1963. 24 p. (MIRA 16:12)  
(Metal spraying)

DALIDCHIK, I.D.; FUFAYEVA, G.I., red.; YASHCHUKOVA, N.V., tekhn.  
red.

[Progressive methods of metal welding] Progressivnye metody  
svarki metallov; uchebnoe posobie.[n.p.] Rosvuzizdat, 1963.  
57 p.

(MIRA 16:12)

(Welding)

GRINBERG, B.G.; IVASHCHENKO, T.M.; FUFAYEVA, G.I., red.; EGGERT,  
A.P., tekhn. red.; BARANOV, Yu.V., tekhn. red.

[Metallography and the heat treatment of metals; guide to  
laboratory work] Metallovedenie i termicheskaya obrabotka;  
rukovodstvo k laboratornym zaniatiyam. Moskva, Rosvuzizdat,  
1963. 179 p. (MIRA 16:6)  
(Metallography) (Metals--Heat treatment)

PARAKHIN, V.A., kand. tekhn. nauk; FROLOV, V.V., dots., kand. tekhn. nauk; SHORSHOROV, M.Kh., dots., kand. tekhn. nauk; GOSPODAREVSKIY, V.I., inzh.; SUBBOTIN, Yu.V., inzh.; KURKIN, S.A., dots., kand. tekhn. nauk; VINOKUROV, V.A., dots., kand. tekhn. nauk; KAGANOV, N.L., dots., kand. tekhn. nauk; SHASHIN, D.M., kand. tekhn. nauk; AKULOV, A.I., dots., kand. tekhn. nauk; NAZAROV, S.T., dots., kand. tekhn. nauk; YEVSEYEV, G.B., dots., kand. tekhn. nauk; NIKOLAYEV, G.A., prof., doktor tekhn. nauk, red.; TITOVA, V.A., red.; FUFAYEVA, G.I., red.; CHIZHEVSKIY, E.M., tekhn. red.

[Laboratory work on welding] Laboratornye raboty po svarke. Moskva, Rosvuzisdat, 1963. 274 p. (MIRA 16:8)

1. Nauchno-pedagogicheskiy kollektiv Kafedry svarochnogo proizvodstva Moskovskogo vysshego tekhnicheskogo uchilishcha (for all except Nikolayev, Titova, Fufayeva, Chizhevskiy).
2. Zaveduyushchiy kafedroy "Mashiny i avtomatizatsiya svarochnykh protsessov" Moskovskogo vysshego tekhnicheskogo uchilishcha (for Nikolayev).

(Welding—Study and teaching)

YUDIN, V.A.; BARASOV, G.A.; FUFAYEVA, G.I., red.; CHIZHEVSKIY,  
E.M., tekhn. red.

[Collection of problems and examples in the theory of  
mechanisms and machines] Sbornik zadach i primerov po teo-  
rii mekhanizmov i mashin. [n.p.] Rosvuzizdat, 1963. 282 p.  
(MIRA 16:10)

(Mechanical engineering--Problems, exercises, etc.)



KHRZHANOVSKIY, A.B.; PUFYEV, G.I., red.

[Lecture; Mechanization and automation in forges and sheet-metal working plants; for students in the metallurgy department specializing in forging and sheet-metalwork] Lektsiia; Mekhanizatsiia i avtomatizatsiia v kuznechnykh i kuznechno-shtampovykh zavodakh dlia studentov metallurgicheskogo fakul'teta. Moskva, 1961. 44 p. (MIRA 17:11)

VORONKOV, Ivan Mikhaylovich, prof.; AYZENBERG, Tusya Bentsionovna;  
FUFAYEVA, G.I., red.

[Theoretical mechanics; program, methodological instructions and tests for students of correspondence institutions of higher education (scope of the course according to the study plan for 140-160, 180-190 and 200-220 hours)] Teoreticheskaya mekhanika; programma, kratkie metodicheskie ukazaniya i kontrol'nye zadaniya dlya studentov zaочnykh vysshiikh uchebnykh zavedenii (ob'em kursa po uchebnomu planu 140-160, 180-190 i 200-220 chasov). Izd.5. Moskva, Vysshaya shkola, 1961. 130 p. (MIRA 17:9)

TOKAREV, V.L.; FUFAYEVA, G.I., red.

[Experimental determination of the kinematic and dynamic characteristics of machines; methodological manual on the theory of mechanisms and machines] Eksperimental'noe opredelenie kinematicheskikh i dinamicheskikh kharakteristik mashin; uchebno-metodicheskoe posobie po teorii mekhanizmov i mashin. [n.p.] Vysshaya shkola, 1964. 22 p. (MIRA 18:4)

FADEYEV, Sergey Pavlovich[deceased]; ZYBIN, V.P., doktor tekhn. nauk, retsenzent; POKROVSKIY, A.M., kand. tekhn. nauk, dots., nauchn. red.; FUFAYEVA, G.I., red.

[Preparation of a course project on machine parts] Kursovoe proektirovanie detalei mashin. Moskva, Vysshaya shkola 1964. 302 p. (MIRA 18:2)

1. Zaveduyushchiy kafedroy "Detali mashin" Vsesoyuznogo zaochnogo mashinostroitel'nogo instituta (for Zybin).

VASILENKO, Aleksey Nikolayevich, kand. tekhn. nauk; DRYZHAKOV, Yevgeniy Vasil'yevich, dots.; ISAYEV, Sergey Ivanovich, kand. tekhn. nauk; KORNEYCHUK, Nikolay Karpovich, kand. tekhn. nauk, dots.; KOFANOV, Vyacheslav Ivanovich, assistant; KRUTOV, Vitaliy Ivanovich, doktor tekhn. nauk, prof.; MIRONOV, Boris Mikhaylovich, kand. tekhn. nauk; NIGMATULIN, Iskander Nigmatulevich, doktor tekhn. nauk, prof.; NOSOV, Mikhail Vasil'yevich, prof.; SAMOYLOV, Mikhail Sergeyevich, assistant; SPORYSH, Igor Pavlovich, kand. tekhn. nauk, prof.; KHVOSTOV, Viktor Ivanovich, kand. tekhn. nauk; SHISHOV, Yevgeniy Viktorovich, kand. tekhn. nauk; YUDAYEV, Boris Nikolayevich, kand. tekhn. nauk, dots.; KUTYRIN, I.N., dots., kand. tekhn. nauk, retsazent; SHVEDOV, A.M., dots., retsazent; TUPITSYNA, L.A., red.; FUFAYEVA, G.I., red.

[Problems in technical thermodynamics and heat transfer]  
Sbornik zadach po tekhnicheskoi termodinamike i teplopere-  
dache. [By] A.N.Vasilenko i dr. Moskva, Vysshaya shkola,  
1964. 369 p. (MIRA 17:4)

1. Prepodavatel'skiy kollektiv kafedry termodinamiki i teplo-  
peredachi Moskovskogo vysshego tekhnicheskogo uchilishcha  
(for all except Kutyrin, Shvedov, Tupitsyna, Fufayeva). 2. Mo-  
skovskiy aviatsionnyy institut (for Kutyrin, Shvedov).

GLUSHKOV, G.S.; SINDEYEV, V.A.[deceased]; BEZUKHOV, N.I., doktor  
tekhn. nauk, prof., zasl. deyatel' nauki i tekhniki  
RSFSR, retsenzent; KOPYLENKO, V.P., prof., nauchn. red.;  
FUFAYEVA, G.I., red.

[Course in the strength of materials] Kurs soprotivleniia  
materialov. Moskva, Vysshiaia shkola, 1965. 767 p.  
(MIRA 18:5)

VOROB'YEV, Khariampiy Sergeyevich; MAZUROV, Dmitry Yakovlevich;  
SOKOLOV, Aleksey Aleksandrovich. Prinimal uchastiye  
SEVAST'YANOV, Ye.F.; FUFAYEVA, G I., red.

[Heat-engineering processes and the equipment of silicate  
using industries] Tekhnologicheskie protsessy i ap-  
paraty silikatnykh proizvodstv. Moskva, Vysshais shkola,  
1965. 7.2 p. (MIRA 18:6)

FUFAYEVA, G.I., red.

[Program for the course "Theoretical principles of electrical engineering" for engineering and technical professions in institutions of higher learning] Programma kursa "Teoreticheskie osnovy elektrotekhniki" dlia inzhenerno-tekhnicheskikh spetsial'nostei vysshikh uchebnykh zavedenii. Moskva, Vysshiaia shkola, 1961. 18 p.

(MIRA 19:1)

1. Russia(1923- U.S.S.R.) Uchebno-metodicheskoye upravleniye po vysshim uchebnym zavedeniyam.



NYURENEBERG, Vladimir Arkad'yevich; MLODZEYEVSKAYA, Irina  
Aleksandrovna; YEFIMOV, A.P., otv. red.; FUFAYEVA, M.N.,  
red.; CHURAKOVA, V.A., tekhn. red.

[Fundamental principles of the design of automatic broad-  
cast level regulators] Osnovnye polozheniia po raschetu  
avtomaticheskikh regulatorov urovnia veshchatel'nykh pe-  
redach. Moskva, Sviaz'izdat, 1963. 52 p. (MIRA 16:10)  
(Radio--Transmitters and transmission)

GORON, I.Ye., red.; VLENGENYUE, L.I., red.; FUFYEV, B.N.,  
red.

[Stereophony] Stereofonija: informatsionnyi sbornik.  
Moskva, Sviaz', 1964. 100 p. (MIRA 17:11)

SA: OYLOV, Vladimir Fedorovich; MAKOVEYEV, Vladimir Grigor'yevich;  
FUFAYEVA, M.N., red.

[Pulse techniques] Impul'snaia tekhnika. Moskva, Izd-vo  
"Sviaz'" 1964. 279 p. (MIRA 17:5)

DUBINSKIY, Leonid Mikhaylovich; FURMAN, S.L., otv. red.; FUFAYEVA,  
M.N., red.

[Power supply of television receivers] Bloki pitaniia te-  
levizionnykh priemnikov. Moskva, Sviaz', 1964. 93 p.  
(Biblioteka "Televizionnyi priem, no.15) (MIRA 17:12)

CHISTYAKOV, Nikolay Iosafovich; KASHITSIN, A.I., retsenzent;  
AMALITSKIY, M.V., retsenzent; FUFAYEVA, M.N., red.

[Principles of radio communication and radio relay  
lines] Osnovy radiosviazi i radioreleinye linii. Mo-  
skva, Sviaz', 1964. 325 p. (MIRA 18:2)

1. Alma-Atinskiy tekhnikum svyazi (for Amalitskiy).

SAMOYLOV, G.P., otv. red.; FURMAN, S.L., otv. red.; FUFAYEVA,  
M.N., red.

[Television receivers; a reference album] Televizionnye  
priemniki; al'bom spravochnik. Moskva, Sviaz', 1964.  
71 p. (Biblioteka "Televizionnyi priem," no.16)  
(MIRA 18:4)

L 18048-63

EPF(n)-Z/EWP(q)/EWT(m)/BDS

APFTC/ASD/SSD

Pu-4

WW/JD/JG

ACCESSION NR: AP3002846

S/0126/63/015/006/0873/0879

AUTHORS: Butra, F. P.; Yevkina, Z. F.; Fufayeva, O. L.

TITLE: Structural variation in alpha-uranium monocrystals deformed by stretching to the rupture point

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 6, 1963, 873-879

TOPIC TAGS: stretching effect, alpha-uranium, structural variation

ABSTRACT: The  $\alpha$ -uranium monocrystals obtained by the phase transition  $\beta \rightarrow \alpha$  and recrystallization in the  $\alpha$ -phase were deformed by stretching at room temperature. X-ray photographs showed structural variations in monocrystals with respect to deformation degree. Small deformations caused extension of all the spots on the Laue diffraction patterns. Further stretching caused the disappearance of the Laue spots and the appearance of separate maxima of the characteristic radiation located irregularly on the Debye rings. Still further deformation caused an orderly arrangement of the maxima. The maximum deformation (close to the rupture point) produced the appearance of an axial texture with  $[001]$  axis.

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L 18048-63

ACCESSION NR: AP3002846

Because all the experiments showed only the texture with the  $[001]$  axis, it was assumed that plastic deformation of  $\alpha$ -uranium at room temperature proceeds mainly by gliding along  $(010)$  -  $[100]$  and by twinning  $\{130\}$  -  $\langle 310 \rangle$ . Orig. art. has: 8 figures.

ASSOCIATION: none

SUBMITTED: 16Nov62

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: ML, PH

NO REF SOV: 001

OTHER: 006

Card 2/2



L 9558-66 ENT(m)/EPF(n)-2/ENP(t)/ENP(h) IJP(c) ES/JD/WW/JG/CG  
 ACC NR: AP5026444 SOURCE CODE: UR/0089/65/019/004/0372/0380

AUTHOR: Butra, F. F.; Yevkina, Z. F.; Pufayeva, O. L.; Korobeynikov, I. A.;  
 Lebedev, L. M. 55 55 55 55 49  
 55 55 55 55 B

ORG: none

TITLE: The effect of temperature and neutron irradiation on plastic deformation of  
 alpha uranium monocrystals 19 46

SOURCE: Atomnaya energiya, v. 19, no. 4, 1965, 372-380

TOPIC TAGS: radiation defect, radiation damage, neutron bombardment, uranium

ABSTRACT: The effect of temperature, crystal orientation, and neutron irradiation on the plastic deformation of alpha uranium monocrystals was investigated. The shape of the stress-strain curves of unirradiated samples was explained in terms of the plastic deformation modes. The effect of neutron irradiation on plastic deformation was investigated on  $9 \times 1.5 \times 0.4-0.5$  mm monocrystalline samples grown by  $\beta + \alpha$  recrystallization. The samples were exposed to integrated fluxes (nvt) up to  $10^{17}$  n/cm<sup>2</sup> and to  $4 \times 10^{20}$  n/cm<sup>2</sup> at temperatures not exceeding 100C and subjected to tensile tests. X-rays and metallographic investigations have shown that exposure to nvt up to  $1.6 \times 10^{16}$  n/cm<sup>2</sup> does not change the plastic deformation mode. In crystals in which initial deformation occurred by slip along the plane (010) the yield point increased rapidly at small nvt, reaching saturation at  $10^{17}$  n/cm<sup>2</sup>. Irradiation caused a 3-5-fold increase in

Card 1/2 UDC: 621.039.553 2

L 9558-66

ACC NR: AP5026444

the critical shear stress and decreased elongation from ~65% to ~40%. Annealing at 450C of crystals exposed up to  $5.5 \times 10^{17}$  n/cm<sup>2</sup> restored the mechanical properties of the samples. Orig. art. has: 14 figures. [CS]

SUB CODE: SS/ SUBM DATE: 22Feb65/ ORIG REF: 006/ OTH REF: 012/ ATD PRESS:

4151

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Card 2/2

MOROZOVA, L.N.; MIRONOVA, G.V.; FUFAYEVA, R.A.; KOVALEVA, V.A.

Effect of acupuncture in different points of influence on  
the mediator function of the nervous system. Sbor. trud.  
GMI no.9:73-80 '62. (MIRA 17:2)

1. Iz kafedry gospiatal'noy terapii lechebnogo fakul'teta i  
terapevticheskogo otdeleniya oblastnoy bol'nitsy (zav. -  
prof. V.G. Vogralik), Gor'kiy.

YEFIMOV, A.S., kand. med. nauk; SMEDLER, R.I.; PUFAYEVA, E.A. (Gor'kiy)

"Goiter heart", its pathogenesis, clinical and electrocardiographic characteristics and classification. Probl. endok. i gorm. 9 no.6:64-71 N-D '63.

(MIRA 17:11)

1. Iz kafedry gosptal'noy terapii (zav. - prof. V.G. Vogralik)  
Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova.

FUFEZAN, I.

COUNTRY : HUNGARY  
 CATEGORY : Chemical Technology. Chemical Products and Their Applications. Synthetic Polymers. Plastics. <sup>H</sup>

ABS. JOUR. : RZhKhim., No 17, 1959, No. 62748

AUTHOR : Szabo, A.; Soo, A.; Elonataki, I.; ~~Fufezan~~, I.

INSTITUTE : -

TITLE : New Commercial Application of Ureaformaldehyde Resins.

ORIG. PUB. : Kolozsvari egyet. kozl. Termeszettud. sor., 1957, 2, No 1-2, 119-126

ABSTRACT : The ureaformaldehyde resin was obtained by condensation of urea (in water solution with approx. 12% concentration) and formaldehyde in a molal ratio of 1:3. The condensation reaction was conducted at the boiling point in the course of 10 hours (pH of 6.2 - 6.5), then the resin was concentrated by evaporation at the residual pressure of 11 mm and 60° temperature. It is proposed to employ the obtained resin in place of the nitro-glue in the shoe industry. Stability of the glue resin is 2-3 weeks. --I. Pesin.

Card: 1/1

FUFEZAN, I.

COUNTRY : Hungary  
 CATEGORY : Chemical Technology. Leather. Fur. Gelatine.  
 Tanning Materials. Industrial Proteins.  
 ABS. JOUR. : RZKhim., No.20 1959, No.73622  
 AUTHOR : Szabo, A.; Szo, A.; Elopataki, L.; Fufezan, I.  
 INST. :  
 TITLE : Preparation of Activated Charcoal from  
 Collagen-Containing Industrial Waste  
 ORIG. PUB. : Kolozsvari egyet. kozl. Termeszettud. sor.,  
 1957, 2, No 1-2, 127-134  
 ABSTRACT : Description of experiments which show the  
 possibility of utilizing sole-leather waste for making  
 activated charcoal of standard quality. A finer grinding  
 of the raw material increases the activity of finished  
 product. To obtain charcoal of higher activity it is  
 necessary to subject the raw material to a two-fold chemi-  
 cal activation (with 30% solution of  $ZnCl_2$ ) with a second  
 activation with hot air. Preliminary defatting of the waste  
 does not improve the quality of the charcoal. Optimal  
 temperature and duration of carbonization, 750° and 6 hours  
 temperature of second treatment with air, about 350°. In  
 determining the activity the iodometric method can not be  
 CARD: 1/2

135

COUNTRY : Hungary  
 CATEGORY :

H-35

ABS. JOUR. : RZKhim., No. 1959, No. 73622

AUTHOR :  
 INST. :  
 TITLE :

ORIG. PUB. :

ABSTRACT : used. It is possible to utilize the method  
 based on adsorption of acetic acid. -- S. Rozenfel'd.

CARD: 2/2

L 33363-66 EWP(t)/ETI IJP(c) JD/JH

ACC NR: AP6024601

SOURCE CODE: RU/CO17/65/000/009/0178/0480

AUTHOR: Vasiliu, A. (Engineer); Fufezan, P.

ORG: [Vasiliu] Ministry of Machine Building Industry (Ministerul Industriei Constructiilor de Masini); [Fufezan] "23 August" Works, Bucharest. (Uzinele "23 August")

TITLE: Observations concerning the plastic strain of ACD aluminium alloy for pistons

SOURCE: Metalurgia, no. 9, 1965, 478-480

TOPIC TAGS: aluminum base alloy, engine piston/ACD aluminum base alloy

ABSTRACT: The authors summarize the principal precautions that must be taken to assure the good quality of ACD aluminum alloy for pistons. The measures mentioned include accuracy and avoidance of casting interruptions during the preparation, reduction of friction coefficients during extrusion through the assurance of good tool surfaces, abiding by speed and time parameters, and homogenous heating. Orig. art. has: 7 figures. [Based on authors' Eng. abst.] [JPRS: 33,732]

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 002

Card 1/1

UDC: 669.715:621-242:539.374

CHISU, Alexandru, conf. ing.; FUFUZAN, V., ing.; POPA, M., ing.;  
POP, S., ing.

Contributions to the increase of durability of bridges and  
ingot molds during exploitation. Metalurgia constr mas 14  
no. 3:193-199 Mr '62.

1. Institutul politehnic, Cluj (for Chisu).
2. Intreprinderea metalurgica, Aiud (for Fufezan, Popa).



PROCEEDINGS MEDICAL SECTION VOL 13/2 Surgery Feb 59

1083. THE FORMATION AND CLOSURE OF A DEFECT IN THE INTERATRIAL SEPTUM (Russian text) - Fufin V.I. - EKSPER. KHIR. 1956, 5 (17-24)  
The interatrial septum follows a complicated path of development in embryogeny, creating conditions for the formation of defects. The most common defect is failure of closure of the foramen ovale. The following operations are in use at the present time for closing septal defects: (1) Operation without opening the heart cavity. This is technically difficult. A reduction in the size of the atria takes place, with the danger of stenosis of the mouths of the vessels (invagination of the auricle). (2) Operations under digital control, the finger being inserted into the heart cavity. Two variations of this operation are described: using a plastic funnel (Gross, 1952) and atriosepticopexy (Bailey, 1952). (3) Operations carried out either under direct vision with clamping of the venae cavae without or with hypothermia (Lukes and Taussig, 1952) and artificial circulation (Ellis, 1955). Total clamping of the venae cavae and the azygos vein shortens duration of the intra-cardiac operation. It carries, however, the danger of disturbance of the cerebral circulation and of air embolism; without hypothermia the veins may be clamped for a period of 2-3 min. Operations were performed on dogs at normal temperature with clamping of the veins. The operation lasted from 3-3.5 min. Of the 21 experimental animals, 11 survived the operation. (S)

*by prof. Tetshy, Khirurgicheskoy kliniki  
(dir. - prof. A.M. Bakulev), II Moskovskogo  
meditsinskogo instituta im. S.V. Stel'skaya i  
laboratorii eksperimental'noy fiziologii i  
ozhivleniya organizmov, AMN SSSR*

Meshalkin, E. N., Medvedev, I. A., and Fufin, V. I.

"A new method for the closure of a patent ductus arteriosus with a mechanical clip suture." Novye khirurgicheskie apparaty i instrumenty i opyt ikh primeneniya, No. 2, 1958, p. 13.

Cent. Inst. Advanced Training of Physicians

MESHALKIN, Ye.N.; FUFIN, V.I.

Result of closing of the patent ductus arteriosus with the aid of  
a mechanical multistaple suture. Eksper. khir. 5 no. 2:26-34 Mr-  
Ap '60. (MIRA 14:1)

(DUCTUS ARTERIOSUS--SURGERY)

MIKAYELIAN, A.L.; ANTONOV, O.S.; FUFIN, V.I.

Diagnosis of patent ductus arteriosus. Vop. pat. i reg. org. krov. i dykh.  
no.1;233-241 '61. (MIRA 18:7)

FUFIN, V.I.

Some problems of diagnosis in surgical treatment of patent ductus arteriosus  
and the immediate results of its closure with a mechanical suture. Vop. pat.  
i reg. org. krov. i dykh. no.1:243-249 '61. (MIRA 18:7)

MESHALKIN, E. N., prof.; FUFIN, V. I.

A method for closing patent ductus arteriosus with a mechanical suture. Khirurgia, Sofia 14 no.2/3:194-199 '61.

1. Institut po eksperimentalna biologija i meditsina na sibirskoto otdelenie na AN na SSSR.

(DUCTUS ARTERIOSUS surg)

BUTEYKO, K.P.; ZHUK, Ye.A.; FUFIN, V.I.

ECG in patent ductus arteriosus and its changes following closure of the duct. Eksper. khir. i anest. 9 no.1:11-13 Ja-F '64.

(MIRA 17:12)

1. Laboratoriya funktsional'nykh metodov issledovaniya (zav. K.P. Buteyko) Instituta eksperimental'noy biologii i meditsiny (dir. - prof. Ye.N.Meshalkin) Sibirskogo otdeleniya AN SSSR, Novosibirsk.

VINOGRADOVA, T.S., starshiy nauchnyy sotrudnik; VLASOV, Yu.A.: FUFIN, V.I.

Characteristics of blood flow in patent ductus arteriosus.  
Pat. fiziol. i eksp. terap. 9 no. 4:70-76 JI-Ag '65. (MIRA 18:9)

1. Laboratoriya modelirovaniya krovoobrashcheniya (zav. - starshiy nauchnyy sotrudnik T.S.Vinogradova) Instituta eksperimental'noy biologii i meditsiny (direktor - Yu.I.Borodin) Ministerstva zdravookhraneniya RSFSR, Novosibirsk.



L 25994-66 EWT(d)/EWP(1) IJP(c)

ACC NR: AP6012542

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AUTHORS: Neymark, Yu. I. (Gor'kiy); Fufayev, N. A. (Gor'kiy)

ORG: none

TITLE: Stability of steady motions of holonomic and nonholonomic systems

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 2, 1966, 236-242

TOPIC TAGS: motion stability, pendulum mechanics, coordinate system,  
perturbation,

ABSTRACT: It is shown that dynamic systems with a manifold of steady motions possess a number of singularities. Some results of a theoretical study are illustrated by an example of a plane pendulum. A system with incomplete dissipation of mechanical energy whose motion is described by

$$\left( \frac{d}{dt} \frac{\partial L}{\partial \dot{q}_j} + \sum_{i=1}^m h_i q_i = \frac{\partial L}{\partial q_j}, \quad \frac{d}{dt} \frac{\partial L}{\partial \omega_k} = 0 \quad \begin{matrix} (j=1, 2, \dots, m) \\ (k=1, \dots, n-m) \end{matrix} \right)$$

is considered. In the case of holonomic as well as nonholonomic systems, the steady motions form a manifold of a certain dimensionality  $q > 0$ . In the case of a holonomic system,  $q \geq n - m$ . The singularities of the system are expressed by the presence

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ACC NR: AP6012542

of zero roots of the eigenequation in the possibility of bifurcations of a new type, which do not hold for the isolated state of equilibrium, and also by the peculiarity of the behavior of the system with continuously acting small perturbations. Orig. art. has: 23 formulas, 1 diagram, and 1 graph.

SUB CODE: 20,12/

SUBM DATE: 09Apr65/

ORIG REF: 006/

OTH REF: 002

Card 2/2

KREMENNA, L.A.; MEDVEDEV, I.I., detainee; FUDINA, N.I.

Labor following rejection of the heart for operation and its replacement by plastic prosthesis. Akush. i gln. no. 1:125-34/185.

(MIRA 18:10)

1. Institut eksperimental'noy biologii i meditsiny MChS, Inst. kardiologii i akushersko-ginekologicheskoye otdeleniye bol'nitsy (glavnyy vrach B.A. Chevalkov) Sibirskoye okrugnoye AU SSSR, Novosibirsk.

FUFLYGIN, N.D.

New method of track maintenance in a junction point. Put'i  
put.khoz. 5 no.5:18-19 My '61. (MIRA 14:6)

1. Starshiy dorozhnyy master, st. Perm' II, Sverdlovskoy dorogi.  
(Railroads--Maintenance and repair)

FUFLYGINA, T.P.

Experimental studies on irradiation from the second to the first signal system.

Zhurnal Vysshei Nervnoi Deyatel 'nosti IM, I.P. Pavlova. Vol 3, No 5, p 718, 1953.

SAVEL'YEVA, Ye.; MONASTYREVA, M.; ORLOVA, G.; KUZNEV, A.; FUFLYGINA, T.; LASKINA, V.;  
KOVALEVAYA, Ye. V.

Effect of factors of external environment on the course of rheumatism in  
children. *Pediatrics*, Moskva no. 4: 40-41 July-Aug 1953. (CML 25:1)

1. Sixth course students under the supervision of Docent Ye. V. Kovaleva.
2. Of the Scientific Student Circle of the Department of Children's  
Diseases (Head of Department -- Prof. Yu. F. Dombrovskaya, Corresponding  
Member AMS USSR) of First Moscow Order of Lenin Medical Institute.

FUPLYGINA, T.P.

Scientific conference on problems in the relationship between the  
first and the second signal systems. Zhur.vys.nerv.deiat. 4 no.6:  
924-929 M-D '54. (MIRA 8:7).  
(CEREBRAL CORTEX, physiology,  
signal systems, relationship)

*FUFLYGINA, T.P.*

V-12

USSR/Human and Animal Physiology - Nervous System.

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4470

Author : T.P. Fuflygina

Inst : Institute of the Higher Nervous Activity, Academy of Sciences USSR

Title : On the Changes of Verbal Reaction to Verbal Stimuli in Children under the Action of External Inhibition.

Orig Pub : Tr. In-ta vyssh. nerv. deyatel'nosti AN SSSR, ser. patofiziolog., 1956, 2, 34-45

Abstract : A fixed verbal reaction in an associative experiment (for instance: sky - blue) was altered (sky - clouded) in 42 students, age bracket 8, 12 and 16. The effects of the external inhibition led to increased latent period of the reaction without changes of its new property, or disinhibition of the earlier verbal connection,

Card 1/2

*FUFLYGINA, T.P.*

V-12

USSR/Human and Animal Physiology - Nervous System.

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4476

Author : T.P. Fuflygina

Inst : Institute of the Higher Nervous Activity, Academy of Sciences USSR

Title : On the Irridiation of the Inhibitory Process from the Second to the First Signalling System.

Orig Pub : Ser. patofiziol., 1956, 2, 99-105

Abstract : The association experiment included definitions of direct stimuli of conditioned motor reactions (words like "red", "blue", etc). After the extinction of one of the responsive reactions light stimuli were applied. Children between 11 and 12 years of age showed either eclectic inhibition of the connection corresponding to the extinct verbal reaction, diffused extinction of motor



FUFLYGINA, T. P., Cand Med Sci -- (diss) <sup>attempt of an</sup> "Experience in" ~~Experimental~~  
experimental study of the interaction of signalling systems  
in children and influence of the ~~time spent~~ <sup>day</sup> at school ~~during~~  
~~the day~~ upon this interaction." Mos, 1957. 16 pp (Inst of  
Higher Nervous Activity, Acad Sci USSR), 120 copies (KL, 52-  
57, 112)

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FUFLYGINA, T.P.

Some characteristics of the neurodynamics of children suffering from epilepsy in the form of "petit mal" attacks, and the effect of epimide on them. Trudy Inst. vyzn. nerv. delat. Ser. patofiziol. 8:117-126  
'61. (MIRA 15:2)

(ANTICONVULSANTS) (EPILEPTICS)  
(NERVOUS SYSTEM)

FUFYANSKIY, M.A., kand. tekhn. nauk; SALENKO, S.V., red.; KHITROV, P.A.,  
tekhn. red.

[Use of gas in railroad thermal power systems] Gazifikatsiya  
teplosilovogo khoziaistva zheleznykh dorog. Moskva, Gos.  
transp. zhel-dor. izd-vo, 1947, 104 p. (Moscow, Vsesoiuznyi  
nauchno-issledovatel'skii institut zheleznodorozhnogo transporta.  
Trudy, no.6). (MIRA 11:6)

(Gas) (Railroads—Equipment and supplies)

FUFRYANSKIY, Nikolai Aleksandrovich,

Academic degree of Doctor of Technical Sci, based on his defense, 17 December 1954, in the Council of the All-Union Inst of Railroad Transport, of his dissertation entitled: "Research into locomotive gas plants".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 6, 19 Mar 55, Byulleten' MVO SSSR, NO. 14, July 56 Moscow pp 4-22, Uncl.  
JPRS/NY-429

KHOKHLOV, T.N., rukovoditel' teplovoznogo otdeleniya; POYDO, A.A.;

FUTRYANSKIY, N.A.; POLODIN, A.I.

Gas turbine locomotives. Truly TSNII MPS no.87:5-51 '54.  
(Gas turbine locomotives) (MIRA 8:3)

IVANOVA, N.I.; LOSHAK, V.I.; MITAKSA, V.A.; RATNER, M.P.; FUFRIANSKIY, N.A.,  
kandidat tekhnicheskikh nauk, redaktor; VERINA, O.P.; ~~tekhnicheskii~~  
skiy redaktor

[Boiler installations with locomotive boilers] Kotel'nye ustanovki  
s parovoznymi kotlami. Moskva, Gos.transp.zhel-dor. izd-vo, 1955.  
243 p. [Microfilm] (MIRA 9:3)  
(Locomotive boilers)

FUFRIANSKIY, N., doktor tekhn.nauk; YAKOBSON, P., kand.tekhn.nauk

Use of diesel locomotives on U.S. railroads. Zhel.dor.transp.  
36 no.5:90-92 My '55. (MIRA 12:5)  
(United States--Diesel locomotives)

FUPRYANSKY, N.A.

Gas-producer locomotives. Gaz.prom no.2:15-18 P '56. (MIRA 10:1)  
(Gas producers) (Locomotives)



GINZBURG, D.B., doktor tekhnicheskikh nauk, redaktor; KANTOROVICH, B.V.,  
doktor tekhnicheskikh nauk, professor, redaktor; VUFREYANSKIY, M.A.,  
doktor tekhnicheskikh nauk, professor, redaktor; BARK, S.Ye., inzhener,  
redaktor; POLUBOYARINOV, G.N., inzhener, redaktor; MARTYNOVA, M.P.,  
vedushchiy redaktor; IL'IN, B.M., tekhnicheskiiy redaktor

[Gasification of solid fuel; transactions of the 3rd scientific and  
technical conference] Gazifikatsiya tverdogo topliva; trudy tret'ei  
nauchno-tekhnicheskoi konferentsii. Moskva, Gos. nauchno-tekhn. izd-  
vo neftianoi i gorno-toplivnoi lit-ry, 1957. 373 p. (MLRA 10:4)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti.  
Moskovskoye oblastnoye pravleniye.

(Coal gasification) (Gas producers)

(Peat gasification)

PUPRYANSKIY, N.A., doktor tekhn.nauk, prof.

Development of Soviet diesel locomotive building. Elek.i tepl.tiaga  
no.10:3-7 0 '57. (MIRA 10:11)

(Diesel locomotives)

ABRAMOV, S.A., inzhener; VOROB'YEV, N.M., inzhener; GLAGOLEV, N.M., doktor  
tekhnicheskikh nauk, professor; MERLIS, P.M., inzhener; MARGULIS,  
P.S., kandidat tekhnicheskikh nauk; RISKIN, I.V., inzhener;  
FUFRYANSKIY, N.A., doktor tekhnicheskikh nauk, professor

Selecting types of diesels for projected diesel locomotives. Vest.  
TSHII MPS 16 no.2:11-18 Mr '57. (MIRA 10:4)  
(Diesel locomotives)

PRONTARSKIY, A.F., kand.tekhn.nauk; SLOMYANSKIY, A.V., kand.tekhn.nauk,  
dotzent; PUPRYANSKIY, N.A., doktor tekhn.nauk, prof.

Development of scientific investigations in the field of locomotive  
traction and railroad electrification. Vest.TSNII MPS 16 no.6:3-14  
S '57. (MIRA 10:10)

(Locomotives) (Railroads--Electrification)

FUFYANSKIY, N.A., professor, doktor tekhnicheskikh nauk.

Experience in making and operating gas generator diesel locomotives.  
Zel.dor.transp. 39 no.4:21-26 Ap '57. . (MLRA 10:5)  
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FUFRYANSKIY, N.A., doktor tekhnicheskikh nauk, professor.

Some characteristics of the gasification of solid fuels under  
high forced draft and alternating regimes. Trudy TSNII MPS no.135:  
26-33 '57. (MLRA 10:8)

(Combustion) (Fuel)

FUFRIANSKIY, N.A., doktor tekhn.nauk, prof.

On the railroads of Switzerland and the Federal Republic of  
Germany. Vest. TSNII MPS 17 no.4:60-63 Je '58. (MIRA 11:6)  
(Switzerland—Locomotives)  
(Germany, West—Locomotives)

FUFRIANSKIY, Nikolay Aleksandrovich; SAZONOV, A.G., inzh., red.; BOBROVA,  
Ye.N., tekhn.red.

[Evolution of diesel powered locomotives] Razvitie teplovoznoi  
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(Diesel locomotives)



FUFYANSKIY, N.A., doktor tekhn.nauk, prof.

Improvement of diesel locomotive traction. Elek. i tepl.tiaga  
3 no.1:13-14 Ja '59. (MIRA 12:2)  
(Diesel locomotives)

FUPRYANSKIY, N.A., doktor tekhn.nauk, prof.; GUREVICH, A.N., kand.tekhn.  
nauk; KOKOSHINSKIY, I.G., kand.tekhn.nauk

Operation of fuel system components of diesel locomotive engines.  
Elek. i tepl.tiaga 3 no.2:30-32 F '59. (MIRA 12:4)  
(Diesel locomotives--Equipment and supplies)  
(Fuel pumps)

FUFRYANSKIY, N.A., doktor tekhn.nauk prof.

With our Chinese friends. Hlek.i tepl.tiaga 3 no.10:7-10  
0 '59. (MIRA 13:2)

(China--Railroad engineering)

FUFYANSKIY, N.A., doktor tekhn. nauk

Ways of improving the operational characteristics of the TE3 diesel locomotive. Vest. TSNII MPS 18 no.5:10-16 Ag '59.

(MIRA 13:1)

(Diesel locomotives)